

Claims

- [c1] **What is claimed is:**
1. A terminator for a universal serial bus (USB) port, the USB port comprising:
 - a D- signal line;
 - a D+ signal line; and
 - a ground line;

the terminator comprising:

an electrically non-conductive member adapted for mechanically mating with the USB port; and

at least an electrical contact disposed on a surface of the electrically non-conductive member for electrically tying the D- line or the D+ line to the ground line.
- [c2] 2. The terminator of claim 1 wherein the electrically non-conductive member is a cap and the USB port is a male USB port.
- [c3] 3. The terminator of claim 1 wherein the electrically non-conductive member is a plug and the USB port is a female USB port.
- [c4] 4. A mode switching method for a universal serial bus (USB) device, the method comprising:
providing power to the USB device;
detecting whether the D- line or the D+ line of a USB port of the USB device is grounded; and
switching the operational mode of the USB device, the USB device entering into a predefined mode when the D- line or the D+ line of the USB port is grounded.
- [c5] 5. The method of claim 4, wherein the predefined mode is a test mode of the USB device.
- [c6] 6. The method of claim 4, further comprising:
having the terminator of claim 1 mate with the USB port of the USB device.
- [c7] 7. The method of claim 4, wherein power is provided to the USB device either from a USB host or from a separate power supply.

- [c8] 8. A mode switching method for a universal serial bus (USB) device, the method comprising:
providing power to the USB device;
providing a detection circuit for detecting when a first USB port of the USB device is electrically connected to a first USB host and for detecting when a second USB port of the USB device is electrically connected to a second USB host;
providing a USB control circuit for setting an operational mode of the USB device according to the detection circuit, the USB control circuit supporting at least a first operational mode and a second operational mode;
the USB control circuit entering into the first operational mode when the detection circuit determines that the first USB port is electrically connected to the first USB host and the second USB port is not electrically connected to the second USB host; and
the USB control circuit entering into the second operational mode when the detection circuit determines that the first USB port is electrically connected to the first USB host and the second USB port is electrically connected to the second USB host.
- [c9] 9. The method of claim 8 wherein the detection circuit utilizes a USB VBUS line in the first USB port to determine electrical connectivity to the first USB host, and utilizes a USB VBUS line in the second USB port to determine electrical connectivity to the second USB host.
- [c10] 10. The method of claim 8, further comprising :
providing shared FIFOs for the first operational mode and the second operational mode between the USB control circuit and the first USB host and the second USB host.
- [c11] 11. The method of claim 8, further comprising :
detecting whether the D- line or the D+ line of a USB port of the USB device is grounded; and
switching the operational mode of the USB device, the USB device entering into a third operational mode when the D- line or the D+ line of the USB port is

grounded.

- [c12] 12. The method of claim 8, further comprising :
- having the terminator of claim 1 mate with a USB port of the USB device; and switching the operational mode of the USB device, the USB device entering into a third operational mode when the terminator of claim 1 is mating with the USB port.
- [c13] 13. The method of claim 8, wherein power is provided to the USB device either from a USB host or from a separate power supply.